

AMENDMENTS TO THE SPECIFICATION:

Please replace paragraph [0001], entitled **CROSS-REFERENCE TO RELATED APPLICATIONS**, with the following amended paragraph:

[0001] This application claims priority from U.S. Provisional Patent Application No. 60/453,846, filed March 10, 2003 and is a continuation-in-part of U.S. Patent Application No. 09/826,487, filed April 4, 2001, ~~which is a continuation-in-part of U.S. Patent Application No. 09/724,914, filed November 28, 2000, now issued as U.S. Patent 6,565,588 and claims priority from U.S. Provisional Patent Application Nos. 60/194,805, 60/194,952 and 60/194,998 filed April 5, 2000.~~ The disclosures of these applications are incorporated herein by reference in their entireties.

Please replace paragraph [0005] with the following amended paragraph:

[0005] Atherectomy or thrombectomy devices are often used for treatment of arterial occlusions. Atherosclerosis is a condition arising from the deposition of fat-like matter, i.e. plaque, on the walls of blood vessels. As a result of accumulated obstructions, blood flow becomes restricted or blocked, creating health risks, including coronary artery disease, angina and heart attacks. Most methods of using atherectomy and thrombectomy devices involve placement of a guiding catheter into the body and insertion of a guidewire, over which an operating head is guided to a target site where an occlusion is located within a blood vessel. However, devices that do not employ guidewires are also possible. A ~~drive~~ catheter surrounds a drive shaft to effectively isolate the rotating elements of the device from direct contact with any healthy body matter, e.g. tissue. The drive shaft is coupled to the operating head that is advanced, and in some devices, rotated to cut or ablate the obstruction and to restore or improve blood flow in the vessel.

Please replace paragraph [0014] with the following amended paragraph:

[0014] A sealing assembly is provided that uses a liquid as a sealing medium as well as a lubricant of moveable catheter components. In one particular embodiment, the sealing assembly forms an effective seal around a rotatable torque tube as it enters into an area of high vacuum, while effectively preventing loss of vacuum at the proximal end of the sealing assembly. The sealing assembly includes a liner wrapped around a rotatable torque tube. The liner extends longitudinally along at least a portion of the torque tube. A flood space is formed within the inside diameter of the liner, including any internal clearance areas, lumens or gaps in or around the torque tube. A housing, i.e. “sealing member”, is also provided with an infusion port for infusing a sufficient amount of liquid in the flood space to create a seal around the torque tube. In one embodiment, a suction port is included in the sealing member for aspirating fluid from a lumen that extends within a catheter. The liner often ~~separate~~ separates areas of different pressures, such as lower pressure in the flood space from adjacent higher pressure outside or proximal to the flood space. At times, an intersect area is located at the distal terminal end of the liner and within the catheter. The pressure at the liner distal terminal end may be at least substantially equal to the pressure of the catheter lumen at the intersect area. Liquid in the flood space travels toward the intersect area and is forced to exit the flood space at the intersect area. The exiting liquid may travel into the lumen, where it may mix with suction force in the lumen. Oftentimes, the liner is sized to have a length that reduces flow rate of liquid traveling in a distal direction in the flood space and restricts the amount of liquid exiting the flood space.

Please replace paragraphs [0026] through [0029] with the following amended paragraphs:

[0026] The extracorporeal components of the medical device 2 essentially comprise a drive system 8 that rotates a torque tube 10 at the proximal end of the torque tube. The proximal end of torque tube 10 passes through the sealing assembly ~~[[8]]~~ 4 and is operably connected or coupled to drive system ~~[[4]]~~ 8. A catheter 6 surrounds the torque tube from the sealing assembly and extends distally into the body 12. The catheter enclosing the torque tube is inserted into the body at an insertion point 14.

[0027] The drive system [[4]] 8 may be a motor e.g. a high-speed electric motor or a pneumatic-powered motor. However, the drive system may also be any means of manually, such as by hand, or automatically rotating the torque tube.

[0028] The torque tube [[6]] 10 may be any elongated tube that is rotatable. Oftentimes, the torque tube is a drive shaft comprising multiple coils or filars. Drive shaft is typically a flexible, hollow, helical, torque-transmitting shaft. Hollow, multi-filar metallic drive shafts are known in the art and are suitable for use with the present sealing assembly since the sealing assembly permits sealing of non-solid shafts as well as solid shafts. A multi-filar stainless steel coil drive shaft having a bi- tri- or quad-filar construction is often employed. A coil drive shaft having an inner diameter of from about .015 to .025 inch and an outer diameter of from about .025 to .035 inch is typical for atherectomy applications. In some applications, the drive shaft may be rotated at high speeds of about 500 rpm to 200,000 rpm may be used, more typically about 10,000 to 100,000 rpm and more often about 40,000 rpm, or more.

[0029] The sealing assembly 4 may be positioned at various locations along the length of the catheter system that is external to the body. Typically, the sealing assembly is positioned close to the drive system, where the pressure may be generally higher than the more distal end of the device and air is likely to seep into the device.

Please replace paragraph [0051] with the following amended paragraph:

[0051] As shown by the enlarged view in Figure [[3E]] 2E, in some embodiments, an optional main shaft 80 may be secured to the torque tube, e.g. via welding, such that the main shaft rotates with the rotation of the torque tube. The main shaft may also be affixed to one or more retainers 82. In this manner, the torque tube 26 may be secured to and prevented from disengaging from a drive system.